REMARKS

Before specifically addressing the rejections made by the Patent Office, Applicant wishes to discuss the prior art cited in such rejections.

Discussion of References Used in Rejections

Gouin – U.S. Patent No. 6,211,846

Gouin describes a directional finding system for radio signals. (See Gouin, Abstract). The system has more than one dipole antenna; however, each antenna is an identical loop and operates at the same operating frequency. (See Gouin, col. 2, ll. 22-24). Gouin uses the amplitude and phase relationship between the signals on the individual dipole antennas to determine the direction of arrival of a signal. (See Gouin, col. 2, ll. 29-48).

Further, Gouin does not disclose its dipole antennas (6-9) as being asymmetrical. Gouin states that each of its dipole antennas (6-9) is constituted by two segments extending symmetrically on either side of the midpoint at the bottom of the corresponding loop antenna 1-4. (See Gouin, col. 2, ll. 64-66).

Proctor – U.S. Patent No. 6,346,922

Proctor discloses an antenna arrangement containing two pole antennas. (See Proctor, Abstract). There is no disclosure of multiple transponders or wireless communication devices being coupled to the pole antenna. Further, there is no disclosure of where, depending on the operating frequency received, one of a plurality of transponders coupled to the pole antenna will be included in the antenna arrangement at an operating frequency and be excluded at another operating frequency.

Carr – U.S. Patent No. 4,433,336

Carr does not teach a plurality antenna arrangement that is arranged such that each antenna operates at a different frequency with respect to one another. The objective of Carr is to provide a device "capable of distinguishing the direction from which signals are received." (See Carr, col. 1, ll. 7-9). The Carr device uses the amplitude and phase relationship between the signals on coaxial cables 21 and 22 to determine the direction of arrival of a signal. (See Carr, col. 4, ll. 38-41). Each antenna in Carr needs to be operable to receive an incoming signal in

order that a signal processor can determine the direction of arrival of the signal. Therefore, all three antennas of Carr need to be able to receive an incoming signal at the same frequency and at the same time in order that the associated signal processor can determine the direction of arrival of the signal.

Lake – U.S. Patent No. 6,089,458

Lake discloses an interrogator and transponder arrangement for wireless communications. (See Lake, Abstract and Fig. 1). Lake does disclose in Figure 3 a transponder having two antennas (32, 34). However, antenna 32 is a transmit antenna, and antenna 34 is a receive antenna. The transponder in Lake does not have multiple receive antennas wherein each receive antenna is excited by a different operating frequency such that the transponder is capable of receiving the signal communicated by the interrogator through one of the multiple receive antennas.

Rejection of Claims 26-27, 29-30 Under 35 U.S.C. § 102(e) – Gouin

The Patent Office rejected claims 26-27 and 29-30 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,211,846 to Gouin (hereinafter "Gouin").

Applicant has amended independent claims 26 and 29, from which claims 27 and 30 depend either directly or indirectly, respectively, to only clarify the invention. Claim 26 is a transponder that requires a dipole antenna, a first loop conductor antenna, and a second loop conductor antenna. The first and second loop conductor antennas are positioned on opposite sides of the dipole antenna and are capacitively coupled thereto. The antennas are each operatively coupled to a communication electronics, wherein the communication electronics is adapted to receive a signal from a remotely positioned interrogator through one of the antennas, wherein the signal is communicated at an operating frequency that is the operating frequency of one of the antennas.

It should be noted that the objective of the present invention is not to determine the location of the wireless communication device as suggested by the Patent Office on page 5 of the Office Action dated February 9, 2004, but for the wireless communication device to be able to communicate with a number of different interrogators each of which operate at different

frequencies so that the wireless communication device can be compatible with a number of different standard systems.

Claim 29 requires an asymmetrical dipole antenna operatively connected to a wireless communication electronics wherein the dipole antenna is operative at a first frequency. At least one loop antenna is provided and is capacitively coupled to the dipole antenna and operative at a second frequency. The wireless communication electronics receives a signal from a remotely positioned interrogator through one of said antennas when said remotely positioned interrogator generates a frequency signal that is an operating frequency of said one of said antennas.

In order for Gouin to anticipate claims 26-27 and 29-30, Gouin must disclosed either expressly or inherently each and every element and/or limitation of claim 26 and 29. MPEP § 2111.

Gouin does not disclose an antenna arranged to operate at different frequencies with respect to one another to accomplish a multi-frequency operating system. The purpose of Gouin is to provide a device "capable of distinguishing the direction from which signals are received." (See Gouin, col. 2, ll. 29-48). Gouin uses the amplitude and phase relationship between the signals to determine the direction of arrival of a signal. (See Gouin, col. 2, ll. 29-48). Each antenna in Gouin needs to be operable to receive an incoming signal in order that a signal processor can determine the direction of arrival of the signal. Therefore, all antennas of Gouin need to be able to receive an incoming signal at the same frequency and at the same time in order that the associated signal processor can determine the direction of arrival of the signal. There is no reference or suggestion in Gouin that the antennas can be used to selectively communicate via one of the antenna based on the frequency of a received signal.

Further, Gouin does not disclose capacitive coupling between its loop and dipole antennas, or disclose its dipole antennas (6-9) as being asymmetrical, as are required by claims 29-30. Gouin at column 3, lines 36-42, specifically states that the loop antennas (1-4) and the dipole antennas (6-9) are completely decoupled. At column 2, lines 64-66 of Gouin, it states that each of its dipole antennas (6-9) is constituted by two segments extending symmetrically on either side of the midpoint at the bottom of the corresponding loop antenna 1-4.

Therefore, since Gouin does not expressly or inherently disclosed each and every limitation of the rejected claims 26-27 and 29-30, this rejection cannot stand. Applicant does not

address claims 27 and 30 since such is not necessary to obviate this rejection, but Applicant reserves the right to do so in the future if needed.

Rejection of Claims 14-16, 18, and 19 Under 35 U.S.C. § 102(e) – Proctor

The Patent Office rejected claims 14-16, 18, and 19 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,346,922 to Proctor et al. (hereinafter "Proctor").

Claim 14 has been amended to clarify the present invention. Claims 15-16, 18, and 19 depend either directly or indirectly from claim 14. Claim 14 requires a first wireless communication device coupled to a loop conductor antenna operating at a first operating frequency, and a second wireless communication device coupled across the loop conductor antenna on one side of said first wireless communication device. The second wireless communication device couples to the loop conductor antenna including the first wireless communication device at a second operating frequency, and couples to the loop conductor antenna excluding the first wireless communication device at a third operating frequency. A signal communicated by an interrogator is received by the first wireless communication device if the signal is at the first operating frequency. The signal is received by the second wireless communication device if the signal is at the second operating frequency or third operating frequency.

In order for Proctor to anticipate claims 14-16, 18 and 19, Proctor must disclosed either expressly or inherently each and every element and/or limitation in such claims. MPEP § 2111.

Proctor does not disclose multiple transponders coupled to antennas like that claimed in claim 14 of the present invention. Proctor does not disclose a second wireless communication device coupled to the loop conductor antenna including a first wireless communication device at a second operating frequency, wherein the second wireless communication device couples to the loop conductor antenna excluding the first wireless communication device at a third operating frequency.

Therefore, since Proctor does not expressly or inherently disclosed each and every limitation of the rejected claims 14-15, 18, and 19, this rejection cannot stand.

Rejection of Claims 1, 3-5, 8-13, 21, 24, 25, 31, 32, 34, and 36 Under 35 U.S.C. § 103(a) – Gouin, Carr & Lake

The Patent Office rejected claims 1, 3-5, 8-13, 21, 24, 25, 31, 32, 34, and 36 under 35 U.S.C. § 103(a) as being unpatentable over Gouin in view of U.S. Patent Nos. 4,433,336 to Carr (hereinafter "Carr") and U.S. Patent No. 6,089,458 to Lake (hereinafter "Lake").

The combination of Gouin, Carr and Lake in this manner is improper for several reasons. First, the references in combination do not teach or suggest all of the claimed limitations of the rejected claims as required by MPEP § 2143.03. Second, the references teach away from the claimed invention, which is evidence of non-obviousness that must be taken into consideration by the Patent Office. For these reasons, it is clear that the rejected claims are non-obvious in view of the cited references.

Before discussing the deficiencies in this rejection, Applicant clarifies the claimed invention. Applicant has amended independent claims 1, 21, and 29 to only clarify its operation, which include limitations present in each of the rejected claims under this rejection. Claim 1 is a wireless communication device that contains a communications electronics coupled to three antennas (two loop and one dipole). Each of the three antennas is designed to operate at three different operating frequencies. In this manner, when an interrogator located remotely from the wireless communication device sends an interrogation signal in the vicinity of the antennas where the frequency of the interrogation signal is an operating frequency of one of the antennas, the antenna whose operating frequency is that of the interrogation signal will resonate to receive the signal. The signal will in turn be communicated to the communication electronics via its coupling to each of the three antennas. In this manner, the wireless communication device becomes a tri-frequency reception device capable of receiving and communicating at three different frequencies in a manner previously not known before the present invention.

Claim 21 has been amended similar to claim 1, wherein an interrogator located remotely from the wireless communication device sends an interrogation signal in the vicinity of the antennas. If the frequency of the interrogation signal is an operating frequency of one of the antennas, the antenna whose operating frequency is that of the interrogation signal will resonate to receive the signal. The signal will in turn be communicated to the communication electronics via its coupling to each of the three antennas. In this manner, the wireless communication device

becomes a tri-frequency reception device capable of receiving and communicating at three different frequencies in a manner previously not known before the present invention.

Claim 29 requires an asymmetrical dipole antenna operative at a first frequency and at least one loop antenna capacitively coupled to said dipole antenna and operative at a second frequency. An interrogator located remotely from the wireless communication device sends an interrogation signal in the vicinity of the antennas where the frequency of the interrogation signal is an operating frequency of one of the antennas. The antenna whose operating frequency is that of the interrogation signal will resonate to receive the signal. The signal will in turn be communicated to the communication electronics via its coupling to each of the two antennas.

Neither Gouin, Carr, nor Lake teach or suggest an antenna arranged to operate at different frequencies with respect to one another to accomplish a multi-frequency operating system. A person of ordinary skill in the art would recognize that the objective of Gouin and Carr is to provide a device "capable of distinguishing the direction from which signals are received." (See Gouin, col. 2, ll. 29-48; Carr, col. 1, ll. 7-9). The Gouin and Carr devices use the amplitude and phase relationship between the signals to determine the direction of arrival of a signal. (See Gouin, col. 2, ll. 29-48; Carr, col. 4, ll. 38-41). There is no reference or suggestion in either Gouin or Carr that their antennas can be used to selectively communicate via one of the antenna based on the frequency of a received signal.

In fact, Gouin and Carr teach away from the present invention. Each antenna in Carr needs to be operable to receive an incoming signal in order that a signal processor can determine the direction of arrival of the signal. Therefore, all antennas of Gouin and Carr need to be able to receive an incoming signal at the same frequency and at the same time in order that the associated signal processor can determine the direction of arrival of the signal.

Lake discloses an interrogator and transponder arrangement for wireless communications. (See Lake, Abstract and Fig. 1). Lake does disclose in Figure 3 a transponder having two antennas (32, 34). However, antenna 32 is a transmit antenna, and antenna 34 is a receive antenna. The transponder in Lake does not have multiple receive antennas wherein each receive antenna is excited by a different operating frequency such that the transponder is capable of receiving the signal communicated by the interrogator through one of the multiple receive antennas.

Further, as discussed above in the rejection of claim 29 in view of Gouin, because claim 29 includes a limitation of an asymmetrical dipole antenna that is not taught or suggested in Gouin, the combination of these references in this rejection does not teach or suggest all of the limitations in claims 29 and claims 31, 32, 34, and 36. MPEP § 2143.03.

Rejection of Claims 2, 6, 17, 22, 23, and 33 Under 35 U.S.C. § 103(a) – Gouin, Carr, Lake & Proctor

The Patent Office rejected claims 2, 6, 17, 22, 23, and 33 under 35 U.S.C. § 103(a) as being unpatentable over Gouin, Carr, and Lake in view of Proctor.

Claims 2, 6, and 17 depend from claim 1, claims 22 and 23 depend from claim 21, and claim 33 depends from claim 29. As discussed above, neither Gouin, Carr, nor Lake teach or suggest the limitations in claims 1, 21, or 29 from which the rejected claims depend. Further, as discussed above, Proctor does not disclose an arrangement where, depending on the operating frequency received, one of a plurality of antennas is excited at a different operating frequency. Proctor shows two antennas, but one is a transmit antenna and one is a receive antenna wherein the transponder can only receive a signal at one frequency, not multiple.

Therefore, claims 2, 6, 17, 22, 23, and 33 are patentable over the references cited in this rejection.

Rejection of Claim 35 Under 35 U.S.C. § 103(a) – Gouin & Ehlers

Claim 35 was rejected under U.S.C. § 103(a) as being unpatentable over Gouin in view of U.S. Patent No. 4,727,598 to Ehlers (hereinafter "Ehlers").

Claim 35 depends from claim 34, which depends from amended claim 29, and it includes the same deficiency with respect to Gouin as previously described above. Since claim 35, by its dependency from claim 29 via claim 34, includes at least one limitation that is not taught or suggested by the references in this rejection, this rejection cannot stand. MPEP § 2143.03.

It is not necessary for the Applicant to address the Ehler reference to overcome this rejection due to the deficiency in Gouin, but Applicant reserves the right to do so in the future if needed, without prejudice.

Rejection of Claims 7, 20, 28 Under 35 U.S.C. § 103(a) – Gouin, Carr, Lake, Proctor & Goff

Claims 7, 20, and 28 were rejected under U.S.C. § 103(a) as being unpatentable over Gouin, Carr, Lake, and Proctor in view of U.S. Patent No. 6,154,137 to Goff et al. (hereinafter "Goff").

Claim 7 depends from claim 1, as amended, and includes the same deficiency with respect to Gouin, Carr, and Lake, as previously described above. Since claim 7, by its dependency from claim 1, includes at least one limitation that is not taught or suggested by the references in this rejection, this rejection cannot stand. MPEP § 2143.03.

Claim 20 depends from claim 14, as amended, and includes the same deficiency with respect to Gouin, Carr, and Lake, as previously described for claim 14. Since claim 20, by its dependency from claim 14, includes at least one limitation that is not taught or suggested by the references in this rejection, this rejection cannot stand. MPEP §2143.03.

Claim 28 depends from claim 26, as amended, and includes the same deficiency with respect to Gouin, Carr, and Lake, as previously described above. Since claim 28, by its dependency from claim 26, includes at least one limitation that is not taught or suggested by the references in this rejection, this rejection cannot stand. MPEP § 2143.03.

It is not necessary for the Applicant to address the Goff reference to overcome this rejection due to the deficiency in Gouin, Carr, and Lake, but Applicant reserves the right to do so in the future if needed, without prejudice.

The undersigned attorney would welcome a telephone interview if such would be helpful to the Examiner in this matter.

WITHROW & TERRANOVA, P.L.L.C.

By: Steven N. Terranova

Steven N. Terranova
Registration No. 43,185
P.O. Box 1287
Cary, NC 27512
Telephone: (919) 654-4520

Date: 5/13/04
Attorney Docket: 4579-083

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